

U.S. STRATEGIC POSTURE IN A NUCLEAR WEAPONS FREE WORLD

BY

COLONEL JOHN W. EISENHAUER
United States Army

DISTRIBUTION STATEMENT A:

Approved for Public Release.
Distribution is Unlimited.

USAWC CLASS OF 2011

This SSCFP is submitted in partial fulfillment of the requirements imposed on Senior Service College Fellows. The views expressed in this student academic research paper are those of the author and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government.



U.S. Army War College, Carlisle Barracks, PA 17013-5050

REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.				
1. REPORT DATE (DD-MM-YYYY) 29-05-2011		2. REPORT TYPE Civilian Research Paper		3. DATES COVERED (From - To) July 2010 - June 2011
4. TITLE AND SUBTITLE U.S. Strategic Posture in a Nuclear Weapons Free World			5a. CONTRACT NUMBER	
			5b. GRANT NUMBER	
			5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) Colonel John W. Eisenhower			5d. PROJECT NUMBER	
			5e. TASK NUMBER	
			5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Center for International Security and Cooperation Stanford University 616 Sierra Street Stanford, CA 94043			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army War College 122 Forbes Avenue Carlisle, PA 17013			10. SPONSOR/MONITOR'S ACRONYM(S)	
			11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION / AVAILABILITY STATEMENT Distribution Statement A: Unlimited				
13. SUPPLEMENTARY NOTES				
14. ABSTRACT In his 2010 Nuclear Posture Review, President Obama stated that his administration will fulfill its pledge, and subsequently some U.S. treaty obligations under the Nuclear Non-Proliferation Treaty, "to reduce the role of nuclear weapons in our national security strategy and focus on reducing the nuclear dangers of the 21st century, while sustaining a safe, secure and effective nuclear deterrent for the United States and our allies and partners as long as nuclear weapons exist." This paper outlines a potential U.S. strategic posture to sustain a stable environment while maintaining a nuclear weapons free world (NFWF). This paper is intended to generate discussion among today's junior leaders, who are the senior leaders of tomorrow, on some components of a grand strategy required for the U.S. to protect its national security interests in a future NFWF. Furthermore, it provides a broad overview of some challenges that implementing each of those components presents.				
15. SUBJECT TERMS Nuclear Posture Review, Non-proliferation, Ballistic Missile Defense, Open Skies Treaty, New Strategic Arms Reduction Treaty (New START), Reconstitution				
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Unlimited	18. NUMBER OF PAGES 24
a. REPORT Unclassified	b. ABSTRACT Unclassified	c. THIS PAGE Unclassified		
			19b. TELEPHONE NUMBER (include area code)	

USAWC CIVILIAN RESEARCH PROJECT

U.S. STRATEGIC POSTURE IN A NUCLEAR WEAPONS FREE WORLD

by

Colonel John W. Eisenhower
United States Army

William Perry
Project Adviser

This CRP is submitted in partial fulfillment of the requirements of the Senior Service College fellowship.

The views expressed in this student academic research paper are those of the author and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government.

U.S. Army War College
CARLISLE BARRACKS, PENNSYLVANIA 17013

ABSTRACT

AUTHOR: COL John W. Eisenhower

TITLE: U.S. Strategic Posture in a Nuclear Weapons Free World

FORMAT: Civilian Research Project

DATE: 29 April 2011 WORD COUNT: 4,422 PAGES: 24

KEY TERMS: Nuclear Posture Review, Non-proliferation, Ballistic Missile Defense, Open Skies Treaty, New Strategic Arms Reduction Treaty (New START), Reconstitution

CLASSIFICATION: Unclassified

In his 2010 Nuclear Posture Review, President Obama stated that his administration will fulfill its pledge, and subsequently some U.S. treaty obligations under the Nuclear Non-Proliferation Treaty, “to reduce the role of nuclear weapons in our national security strategy and focus on reducing the nuclear dangers of the 21st century, while sustaining a safe, secure and effective nuclear deterrent for the United States and our allies and partners as long as nuclear weapons exist.” This paper outlines a potential U.S. strategic posture to sustain a stable environment while maintaining a nuclear weapons free world (NFWF). This paper is intended to generate discussion among today’s junior leaders, who are the senior leaders of tomorrow, on some components of a grand strategy required for the U.S. to protect its national security interests in a future NFWF. Furthermore, it provides a broad overview of some challenges that implementing each of those components presents.

U.S. STRATEGIC POSTURE IN A NUCLEAR WEAPONS FREE WORLD

Introduction

In his 2010 Nuclear Posture Review, President Obama stated that his administration will fulfill its pledge “to reduce the role of nuclear weapons in our national security strategy and focus on reducing the nuclear dangers of the 21st century, while sustaining a safe, secure and effective nuclear deterrent for the United States and our allies and partners as long as nuclear weapons exist.”¹ His statement echoes the sentiments of four influential U.S. statesmen who have led the call for serious U.S. commitment to work toward a world free of nuclear weapons.²

Though the President freely admits that the conditions which are required to attain a world free of nuclear weapons do not currently exist, and are not likely to exist in his lifetime³, it is prudent to begin examination of a potential U.S. strategic posture to first create and then sustain a stable environment while maintaining a nuclear weapons free world (NFWF). Though stated as a U.S. strategic posture, in reality such an expansive effort would require significant cooperation and coordination across the entire international community. This paper is intended to generate discussion among today’s junior leaders, who are the senior leaders of tomorrow, on some components of a grand strategy required for the U.S. to protect its national security interests in a future NFWF. Furthermore, it will provide a broad overview of some challenges that implementing each of those components presents.

Primary Components

In order to determine what these primary components are, it is necessary to look at relevant U.S. strategic concerns unique to a NFWF. In such a world, ideally all nuclear

weapons would be reduced to non-weaponized components. The reality is that defining a NFWF is a policy decision that must be based on the perceived risk-reward of each nation. In a NFWF world, it is likely that the capability to create nuclear weapons will still exist since the knowledge exists today. Additionally, what “nuclear weapons free” means can be defined in many ways as I will discuss later. Thus, two major concerns for the U.S. in ensuring its national security interests are adequately protected are: peacetime and crisis stability to maintain the status quo in terms of zero nuclear weapons; and, ensuring U.S. reconstitution and escalation dominance should another nation violate an international agreement and pursue a nuclear weapon capability. There are two key aspects which U.S. grand strategy must address in this environment: does the strategy remove the ability of potential adversaries to mount a decisive sudden attack in peacetime or the initial stages of a crisis; and, do the force postures provide for transitional stability should regeneration of nuclear forces be required in an emergency.⁴ Furthermore, any grand strategy must implement all four instruments of national power: diplomacy; information; military; and, economic. As stated above, a key element is that the grand strategy must ensure that the process bringing forces to peak readiness culminates in U.S. escalation dominance.

In order to get to a NFWF, it is possible that other countries may want a much less powerful U.S. conventional force. Through our diplomatic and information instruments of national power, the U.S. must ensure our intentions regarding the status of our conventional forces are fully understood. In this regard, it is not necessarily the capabilities of our conventional forces, but the signal we send to others regarding our intent of use that may be most important to the grand strategy to maintain a stable

environment. The U.S. should ensure that the force it maintains is strong enough to serve as a deterrent to aggression by others and is able to protect our national interests. Yet, this force must not be so strong as to make other nations feel threatened by existential U.S. offensive action which may lead to their pursuit of nuclear weapons as an offset. Finding this balance will be very challenging and any plan must ensure that it maximizes the use of all four instruments of national power. Given the aforementioned environment, I propose that four primary components of a suitable U.S. strategic posture are as follows:

1. International inspections and verification measures
2. Punitive measures in terms of sanctions
3. Defensive measures such as ballistic missile defense
4. Nuclear weapon reconstitution and employment capabilities

Each of these components has unique challenges to implementation across the international community. The former two require an international effort requiring a heavy emphasis on diplomacy for successful implementation. The latter two are components that the U.S. can begin research efforts on today without international cooperation. Yet, just because the U.S. can go it alone does not mean that is the wisest course of action. The following paragraphs discuss each of these components in greater detail.

International Inspections and Verification Measures

The first component of a NFWF grand strategy is international inspections and verification measures. In a NFWF, the ability to sufficiently inspect the peaceful use of nuclear technologies, and to verify no malevolent use of nuclear technologies across the international community, is critical to maintaining the status quo. If sovereign nations are not adequately assured that the nuclear weapons free status quo is

maintained, then it could lead to several adverse outcomes, to include conventional conflict and nuclear breakout. The required inspection and verification regime will require levels of international cooperation and transparency that do not exist today and are not easily attained. The inspection and verification regime may be the single most important part of both a U.S. and international posture in regards to a strategy to maintain a peaceful NFWF. As it may be the most important part, it is good to note that the U.S. and the international community have a head start on this task given the institutions created and treaties negotiated over the past several decades.

The International Atomic Energy Agency (IAEA), established in 1957, has proven effective in both detecting and deterring developments of clandestine nuclear weapons programs since assuming increased responsibilities following the Nuclear Non-proliferation Treaty in 1968. Recent initiatives to reduce numbers and access to nuclear weapons and fissile material recognize both that the IAEA is not omnipotent in this area, and the international community is dangerously close to a nuclear tipping point in which proliferation may be the norm.

Additionally, the 1993 ratification of the Open Skies Treaty and more recent ratification of the New Strategic Arms Reduction Treaty (START) have established effective inspection and verification protocols among several nations in the former case and between the U.S. and Russia in the latter case. The Open Skies Treaty, entered into force on January 1, 2002 established a program of unarmed surveillance flights over the entire territory of the parties to the treaty. The treaty was intended to promote greater openness and transparency in the military activities of the signatories and to enhance security by means of confidence- and security-building measures.

Thus far, verification under this treaty has been limited to systems and forces visible to over-flight. Future treaties may improve upon this to allow for verification of nuclear warheads, fissile materials, and other components and forces that may be shielded or otherwise unidentifiable from an over-flight. Treaties such as these may serve as the basis for international inclusion with additional protocols such as challenge inspections and more intrusive verification measures for warheads and fissile materials. Thus, the IAEA or like organization could serve to provide the international community nuclear weapons free assurance through a continuation of its past and current inspections and verification measures with added protocols.

Although it does not have a perfect record over the past forty-two years, the IAEA has learned from past mistakes to strengthen its inspection protocols and has established increasingly “higher standard[s] for effective, cooperative verification of States’ nuclear undertakings.”⁵ One example of the IAEA displaying its adaptability was displayed in the 1990’s when “developments [in Iraq] . . . prompted the IAEA to develop and implement new measures designed to improve its ability to detect undeclared nuclear material and nuclear-related activities”.⁶ As we work toward a NWFW, we have time to further improve the IAEA’s processes and create/improve technologies to detect material and activities.

In order for the IAEA to be fully effective, any treaty establishing the inspection and verification systems must be more intrusive across the international community than they are at this time. The IAEA’s Model Additional Protocol⁷ and the New START offer two examples for future inspection regimes in a NWFW. These examples are slightly more intrusive, but the risk that comes with more intrusiveness may be worth the reward

of valid verification. By incorporating such a program across the international community, all countries are treated equally in regards to access to nuclear activities and material. The overarching goal is to provide assurance to the international community of every nation's nuclear activities and intentions. Furthermore, it should provide early warning of potential violations so that corrective actions may be taken prior to nuclear breakout. The inspection and verification regimes needed to achieve this must be much more intrusive than they are today to adequately assure the control of warheads and fissile material. The next component of this strategy attempts to address the corrective actions against potential violators should the inspection/verification protocol identify one.

Punitive Measures – Economic and Military Sanctions

The second component in this grand strategy entails taking punitive measures in the form of economic and/or military sanctions. Should inspection and verification measures fail to deter a nation from pursuing nuclear weapons technologies, punitive measures, such as economic or military sanctions, may be used to influence them back to a path of non-proliferation by targeting what some term the Clausewitzian trinity of war: the people, the army, and the government.

Given the level of international cooperation required to get to a NFWF, it is likely that garnering broad and serious international support to sanction violators of an approved inspection/verification regime would be more easily accomplished than it can be today. However, "likely" does not provide a guarantee. The distinguished expert on military warfare, Sir Basil Liddell Hart, observed that "no agreement between Governments has had any stability beyond their recognition that it is in their own

interests to continue to adhere to it”.⁸ Additionally, noted military theorist Carl von Clausewitz stated “if the enemy is to be coerced you must put him in a situation that is even more unpleasant than the sacrifice you call on him to make. The hardships of that situation must not of course be merely transient – at least not in appearance. Otherwise the enemy would not give in but would wait for things to improve.”⁹ Thus, compulsory economic and/or military sanctions must be included in any agreement among nations to maintain a NFWF. These sanctions must convey to all nations that it is in their best interest to continue adherence. The international community must also sustain these sanctions until the appropriate corrective action has been taken by a violator.

Ideally, economic sanctions are the first and only step required to bring a suspected violator back into compliance with the agreed framework. Initially, the sanctions should focus on restricting a nation’s access to nuclear weapons grade material and technologies such as centrifuges. In this way, we target the military instrument of national power through direct targeting of the capability to construct a nuclear weapon. Simultaneously with this action, in order to gain the desired effect of Liddell Hart and Clausewitz, other economic sanctions such as general trade sanctions may be directed at the economic instrument of national power. These sanctions may target the people and the government much the same way that financial and economic sanctions against the Democratic Republic of North Korea have since 1955 with mixed results.¹⁰ The sanctions had mixed results which were related to the willingness of China to enforce them over time. In order to be effective, sanctions must be carried out by all nations. If one nation chooses not to enforce them, they lose their effectiveness. Through these

means, the sanctions may prove severe enough to force the violating government to change its course either voluntarily or through the will of its populace.

The former economic sanctions may be all that is needed to deter those nations which are currently non-nuclear weapons states (NNWS) by denying them the material and technology required to build a nuclear weapon. The latter financial and economic sanctions may be geared more toward targeting the nuclear weapons states (NWS) who may well have both the material and technology to rapidly (within months, if not weeks) produce a nuclear weapon. Thus, the latter sanctions must be compulsory and effective in a relatively short time frame.

In the end, economic sanctions may not be enough and the use of military sanctions may be necessary, to include the use of conventional forces and cyber attacks. In this area, compulsory action is not the solution, but rather the specifics of each situation must be presented to the international community and a consensus gained for action. This has the potential to create a rather unstable situation in regards to international peace and the risk of initiating a major conventional conflict over a suspicion versus the risks of a nuclear-armed nation and subsequent international breakout. These risks must be weighed before the international community commits to a specific action.

Note that diplomatic sanctions are not offered as a path to a solution. In a developing crisis, it would do very little good to impose diplomatic sanctions and essentially eliminate the use of an instrument of national power from the process of solving the problem.

One need note in this discussion that the current U.S. conventional force structure is overwhelmingly superior to any other nation's forces and as mentioned earlier may

create issues in regard to the strategic balance. This is seen today with the existing imbalance which contributes to the desire of a few nations (e.g., Iran, North Korea) to seek nuclear weapons as part of an offset strategy to U.S. conventional strength. At least one expert on U.S.-Iran relations and Iranian cultural, political, and security issues, Dr. Abbas Milani, states that Iran's pursuit of a nuclear weapon has both regional aspects and global aspects related to both deterrence and diplomatic leverage.¹¹ Regionally, Israel possesses a nuclear capability which has resulted in Iran wanting the same as a countermeasure. Furthermore, the U.S. has significant numbers of military forces deployed in countries bordering Iran which further elevates the tensions and the Iranian concerns regarding U.S. intentions. The very public discourse among U.S. statesmen and journalists, often threatening a military solution, has only exacerbated the situation. In this case, the U.S. has not wisely used all of the instruments of national power, but rather has heavily relied upon the threat of a military solution. In a NFWF, the U.S. must adjust this seemingly bellicose pursuit of national goals to ensure that all nations understand our intentions in order to maintain stability. Our grand strategy must demand extensive efforts with the other three instruments of national power prior to even threatening, much less using, military force as a solution. The conventional force structure should not be looked at as a means in itself, but rather, must be considered as one of the four instruments. In recent decades, the relative strength of our military instrument of national power has arguably overwhelmed the diplomatic, information, and economic instruments, leading to a faster path to the use of the military instrument to resolve national security challenges. Relative to the First and Second World Wars, U.S. leadership has been more prone to employ military force to resolve

national security issues before exhausting all reasonable efforts with other instruments of national power. This appears to be especially so since the dissolution of the U.S.'s primary antagonist, the Soviet Union. The conventional force superiority the U.S. possesses may have led to a feeling of impunity in regards to the employment of military force and, if not checked internally, could lead to greater instability as we try to move toward a NFWF. Given the varied performance of sanctions in the past, and the time required for effectiveness, the U.S. has an obligation to its citizenry and allies to ensure that we have adequate defensive measures in place in the case of an attempted nuclear breakout. This leads us to the third component of grand strategy in a NFWF.

Defensive Measures

The third component of this strategy is ensuring that defensive measures are established. Throughout the recent discussions concerning New START, Ballistic Missile Defense (BMD) was a persistent point of concern for lawmakers. The current administration stated that nothing in New START prohibited the U.S. from pursuing BMD, yet some legislators argued that language in the treaty's preamble restricted the U.S. effort in this area. The concern here was that U.S. pursuit of BMD systems could cause Russia to withdraw from the treaty since it could potentially make their arsenal less effective at the lower numbers. Yet, some U.S. statesmen were adamant that the U.S. could and must pursue BMD to protect its national interests.

Ronald Reagan had it right in a March 23, 1983 speech when he “. . . finished with a call to the Science community to join me in research starting now to develop a defensive weapon that would render nuclear missiles obsolete. I made no optimistic forecasts – said it might take 20 years or more but we had to do it”.¹² Reagan's goal

was to render nuclear weapons obsolete by developing adequate defensive measures. Reagan was in a world in which the threat was tens of thousands of nuclear weapons. That is very different than the threat at lower numbers that we see today (tens of hundreds) and the threat of nuclear breakout from zero that we may see in a NFWF. Due to today's reduced numbers and technological advances a defensive system appears much more feasible than it appeared in the 1980s.

This is a path, regardless of the amount of movement toward no nuclear weapons, which the U.S. should pursue. Note that Reagan did not attach any qualifiers to whose scientists should find this solution, nor what the solution should entail. Given the rapid pace of technological development today, it is quite possible that within President Obama's lifetime, the international community of scientists could well develop a technology to make nuclear weapons obsolete. The pursuit should not be solely focused on ballistic missile defense, but should also consider actions to make the fissile material itself benign and/or inaccessible. Among potential solutions that may be considered are: increased quality of detection systems to prevent unknown transfer of fissile material across borders; restricting activities involving the use of fissile material to include verifying limits on enrichment processes for uranium and reprocessing of plutonium to clear isotopes; cyber attacks to disrupt launch and guidance mechanisms; and ballistic missile defense.

To address the concerns regarding potential Russian withdrawal from New START, former Secretary of Defense William Perry has encouraged the Obama Administration to pursue a joint effort in the area of BMD with Russia.¹³ Furthermore, the Center for International Security and Cooperation at Stanford University has partnered with the

Russian Committee of Scientists for Global Security and Arms Control to examine the feasibility of a Joint effort in the areas of early warning and missile defense with two workshops planned in 2011 in both the U.S. and Russia. The U.S. government could take that a few steps farther and gather the support of the broader international scientific community to design and develop a system that would first make ballistic missile technologies obsolete and then seek solutions to other delivery methods such as cruise missiles and “backpack” nuclear weapons.

Knowing that achieving a nuclear weapons free world through diplomacy will be a long process, there are many years to work toward these solutions while these weapons still pose a threat. A near-term first step in this process is to work on the development of a cooperative early warning system. Work on this system would protect our classified nuclear program data while building the initial levels of trust, cooperation, and confidence among nations to proceed toward greater efforts in a classified forum. At that point, we may proceed with multi-national efforts at developing both ballistic missile defenses and other systems to render nuclear weapons obsolete. This process would provide two potential advantages to the U.S.: 1) they could provide a faster path to a better system due to the efforts of the best and brightest scientists around the world, and 2) it brings all nations into the solution of working towards a NFWF at an earlier stage. It is important to note here that most of the initial U.S. gains in the nuclear field were made through the efforts of immigrants to this country. In this manner, the U.S. is essentially following the same path that led it to nuclear weapons to now render them obsolete.

If, however, diplomacy were to achieve a NFWF prior to obsolescence, the U.S. must ensure that it has the capability to reconstitute nuclear weapons at a pace at least as fast as any other nation in case none of the previous components were effective enough to deter breakout. This leads us to the last component of grand strategy in a NFWF.

Reconstitution

The last of the four primary components of a suitable U.S. strategic posture in a NFWF is a capability to reconstitute and employ nuclear weapons. The reality is that the knowledge of how to create a nuclear weapon is in large part ubiquitous, though the material and facilities required are not. Thus, the U.S. must retain a capability to reconstitute weapons in a safe and timely manner while also retaining the delivery capability for such weapons. The difficulty of executing this task is directly linked to the wording of any agreement that takes us to a NFWF. Noted nuclear physicist, Sidney Drell, envisions at least two potential definitions of a NFWF¹⁴: assembled weapons are banned, but components of unassembled nuclear warheads may be retained in declared sites; or, components of nuclear warheads, as well as the assembled warheads themselves, are banned.

Regardless of what definition is agreed to in any future framework, the U.S. must continue efforts to study the challenges associated with re-establishing a nuclear weapon reconstitution capability. In the short term, the least risk method of doing so would be to assume Dr. Drell's formerly defined world in which unassembled components of weapons are available. This approach retains the facilities and expertise that the U.S. would require in the future and encourages future generations of

scientists to enter this field. Additional opportunities such as counter-proliferation, forensic analysis, verification, and nuclear energy efficiency would also provide avenues to retain expert knowledge in this field. Beyond the research required to sustain the technological development capacity, there are several other areas tangential to reconstitution that any future strategy must address. These include, but are not limited to:

1. Protection of facilities from attack, both cyber and physical.
2. Protection of technical personnel and expertise from espionage and other types of subversion.
3. Storage of fissile materials.
4. Retention of delivery systems including ICBM launching facilities, bombers, and submarines which may be considered dual use.

The current levels of protection for our nuclear facilities and the personnel screening programs may be sustained to protect our facilities, personnel, and fissile material. Additionally, retaining delivery systems is more a matter of maintenance and regularly scheduled upgrades of systems to maintain a technological edge. One caveat on the delivery systems is sustaining the capability of the operators to actually employ nuclear weapons.

Given that the goal is a NFWF, the U.S. should evaluate the costs, benefits, and risks associated with maintaining a force structured to employ those systems in the Reserve Component (RC) versus Active Component (AC). Currently, our nuclear employment forces are structured primarily in the AC. Much as the Army does with units that are required for its mission, but not in the first thirty days of a conflict, it may make sense to shift the nuclear warfare role from a primarily AC mission to a RC mission. In addition to force structure savings, these forces in a RC role would more clearly signal a defensive, rather than offensive, posture. This may be a nearer term

step that the U.S. could unilaterally take to back its stated intentions of moving toward a NWFW.

Conclusion

Throughout the nuclear age, there has been a consistent call from U.S. leadership to seek a way to reduce the role of nuclear weapons, if not to eliminate them completely. Policymakers and others with a national security interest should not solely focus on military strategy in a NWFW, but rather work toward a more comprehensive grand strategy that incorporates all instruments of national power to ensure the following:

1. Potential adversaries are unable to mount a decisive sudden attack in peacetime or the initial stages of a crisis; and,
2. Force postures provide for transitional stability should regeneration of nuclear forces be required in an emergency.

Of the four primary components discussed previously, components one through three address the prevention of a decisive sudden attack. The inspection and verification process gains visibility of all nations' efforts in the nuclear arena to ensure peaceful use of nuclear technologies. This should lead to adequate notification of those nations who may have malevolent intent with regards to nuclear weapons. The sanctions process punishes those who may withdraw from voluntary participation in the inspection/ verification process at a limited level with the goal to use the minimal level of punitive measures necessary to correct the behavior of aberrant nations. The defensive measures discussed previously will ensure that if nuclear weapons are employed, their effect does not pose an existential threat to the U.S. and her allies.

Of the four primary components discussed previously, components three and four address transitional stability in the case of regeneration of nuclear forces. By incorporating defensive measures in a NFWF, employment of low numbers of nuclear weapons would be inadvisable due to the limited effectiveness expected. This provides stability at low numbers. If breakout continues, having an adequate reconstitution capability that results in escalation dominance should deter any nation from wanting to continue down such a futile path.

In the nuclear age, it appears that the U.S. has fallen into the trap of “making policy the slave of strategy – and bad strategy at that”.¹⁵ Present and future leaders, across all areas of our instruments of national power, should now begin to shape our preparations for a world free of nuclear weapons by examining potential U.S. grand strategy in such a world.

Note Citations

1. Barack Obama, "Statement by President Barack Obama on the Release of Nuclear Posture Review" (Washington, D.C.: Office of the Press Secretary, 6 April 2010).
2. George P. Shultz, William J. Perry, Henry A. Kissinger, and Sam Nunn, "A World Free of Nuclear Weapons," *The Wall Street Journal*, 4 January 2007, A15.
3. Obama, "Statement by President Barack Obama", 6 April 2010.
4. Bruce G. Blair, *Global Zero Alert for Nuclear Forces*. (Washington, D.C.: The Brookings Institution, 1995), 100.
5. International Atomic Energy Agency, "IAEA Safeguards: Stemming the Spread of Nuclear Weapons", 1: http://www.iaea.org/Publications/Factsheets/English/S1_Safeguards.pdf.
6. Ibid., 2.
7. Ibid., 3: Specific measures provided for in an Additional Protocol include: "information about, and access to, all aspects of States' nuclear fuel cycle, from uranium mines to nuclear waste and any other locations where nuclear material intended for non-nuclear uses is present; short-notice inspector access to all buildings on a nuclear site; information on the manufacture and export of sensitive nuclear-related technologies and inspection mechanisms for manufacturing and import locations; access to other nuclear-related locations; and, collection of environmental samples beyond declared locations when deemed necessary by the IAEA."
8. Basil H. Liddell Hart, *Why Don't We Learn From History?* (New York: Hawthorn Books, Inc., 1971), 67.
9. Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press, 1984), 77.
10. Karin Lee and Julia Choi, "North Korea: Unilateral and Multilateral Economic Sanctions and U.S. Department of Treasury Actions 1955-April 2009" (28 April 2009), 6: http://www.nkeconwatch.com/nk-uploads/ncnk_dprk_sanctions_report_april_2009.pdf. This document broadly outlines the different stages of economic sanctions implemented both unilaterally and multilaterally against North Korea with varying levels of effectiveness that may serve as a template for compulsory action by the international community in a NWWF.
11. Abbas Milani (Hoover Institution, Stanford University), interview by author, 17 January 2011.

12. Ronald Reagan, *The Reagan Diaries*, 1st ed., ed. Douglas Brinkley (New York: HarperCollins Publishers, 2007), 140.
13. William J. Perry (Center for International Security and Cooperation, Stanford University), interview by author, 6 January 2011.
14. Sidney D. Drell (Hoover Institution, Stanford University), interview by author, 27 January 2011.
15. Basil H. Liddell Hart, *Strategy*, 2nd ed. (New York: Penguin Group, March 1991), 343.

Bibliography

Blair, Bruce G. *Global Zero Alert for Nuclear Forces*. Washington, D.C.: The Brookings Institution, 1995.

Clausewitz, Carl von. *On War*. Edited and translated by Michael Howard and Peter Paret. Princeton, NJ: Princeton University Press, 1984.

International Atomic Energy Agency. "IAEA Safeguards: Stemming the Spread of Nuclear Weapons." http://www.iaea.org/Publications/Factsheets/English/S1_Safeguards.pdf.

Lee, Karin, and Julia Choi. "North Korea: Unilateral and Multilateral Economic Sanctions and U.S. Department of Treasury Actions 1955-April 2009." 28 April 2009. http://www.nkeconwatch.com/nk-uploads/ncnk_dprk_sanctions_report_april_2009.pdf.

Liddell Hart, Basil H. *Strategy*. 2nd ed. New York: Penguin Group, March 1991.

Liddell Hart, Basil H. *Why Don't We Learn From History?* New York: Hawthorn Books, Inc., 1971.

Obama, Barack. "Statement by President Barack Obama on the Release of Nuclear Posture Review ." Washington, D.C.: Office of the Press Secretary, 6 April 2010.

Reagan, Ronald. *The Reagan Diaries*. 1st ed. Edited by Douglas Brinkley. New York: HarperCollins Publishers, 2007.

Shultz, George P., William J. Perry, Henry A. Kissinger, and Sam Nunn. "A World Free of Nuclear Weapons." *The Wall Street Journal*, 4 January 2007.

U.S. Department of State. "Open Skies Treaty." Accessed 22 February 2011. <http://www.state.gov/www/global/arms/treaties/openski1.html>.

